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EXAMINER	
ANYA, CHARLES E	

ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,364	SADOT, EMEK	
	Examiner	Art Unit	
	Charles E. Anya	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3/ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/25/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-51 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-7,12-15,17,41,42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2001/0047415 A1 to Skene et al. in view of U.S. Pat. No. 6,400,681 B1 to Bertin et al., and further in view of U.S. Pat. No. 6,182,139 B1 to Brendel.

4. As to claim 1, Skene teaches a method of selecting a server to represent a virtual server hosted by a plurality of servers (figure 1 page 2 paragraphs 0027-0030), comprising: providing, by a load balancer not associated with the virtual server, values, for one or more parameters (Virtual EDNS Server 160 page 3 paragraph 0034), and selecting a server to provide data for the client; responsive to the values of the one or more parameters (page 3 paragraph 0035).

5. Skene is silent with reference to two or more paths, each path defined between a point vicinity of a client accessing the virtual server and a load balancer comprising a

client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

6. Bertin teaches to two or more paths, each path defined between a in a point in a vicinity of a client accessing the virtual server (Col. 13 Ln. 1 – 16).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bertin and Skene because the teaching of Bertin would improve the system of Skene by providing minimum hop path that will result in the least amount of reserved bandwidth in the network and therefore preserve network resources and reduce cost (Bertin Col. 13 Ln. 13 - 16).

8. Berndel teaches a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters (Col. 5 Ln. 1 – 19).

9. It would have been obvious to one of ordinary skill in the ad at the time the invention was made to combine the teachings of Brendel, Bertin and Skene because the teaching of Brendel would improve the system of Bertin and Skene by minimizing client latency since minimal latency paths tend to go around Internet bottlenecks and as result improves the overall performance of the Internet and/or WAN links (Brendel Col. 3 Ln. 10 - 17).

10. As to claim 2, Brendel teaches a method according to claim 1, wherein the load balancer and the client are in the same metropolitan area (Col. 5 Ln. 1 – 19).

11. As to claim 3, Brendel teaches a method according to claim 1, wherein the load balancer and the client are in the same local area network (Col. 5 Ln. 1 – 19).

12. As to claim 4, Skene teaches a method according to claim 1, wherein the one or more parameters comprise at least one of a jitter, a round trip delay or a hop count (page 3 paragraph 0034).

13. As to claim 5, Skene teaches a method according to claim 1, wherein the one or more parameters comprise a cost ("...round trip time..." page 3 paragraph 0034).

14. As to claim 6, Skene teaches a method according to claim 1, wherein selecting the server comprises selecting, by a client-controlled load balancer, responsive to receiving identification of a virtual server requested by the client (page 3 paragraph 0035).

15. As to claim 7, Skene teaches a method according to claim 6, wherein selecting the server comprises selecting, by a client-controlled load balancer, responsive to receiving a connection establishment request from the client ("...client request..." page 3 paragraph 0034).

16. As to claim 12, Brendel teaches the method according to claim 1, further comprising changing the source IP address of packets received by the load balancer from the selected server (Col. 11 Ln. 44 - 53).

17. As to claim 13, Skene teaches a method of claim 1, further comprising transmitting an IP address of the selected server to the client (page 3 paragraph 0035, page 5 paragraph 0059).

18. As to claim 14, Skene teaches method according to claim 13, wherein transmitting the IP address of the selected server to the client comprises transmitting a DNS response (page 3 paragraph 0035, page 5 paragraph 0059).

19. As to claim 15, Skene teaches a method according to claim 1, wherein one of the plurality of servers are located in different geographical regions (page 2 paragraph 0028).

20. As to claim 17, Skene teaches a method according to claim 1, wherein the virtual server hosts a web site (figure 1 page 3 paragraph 0038).

21. As to claim 41, Skene teaches a load balancer, comprising: an interface adapted to receive server access messages from clients (LDNS page 5 paragraph 0054); and a processor (NOTE: a processor is inherent in EDNS server) adapted to determine, for at

least one of the messages, whether the message requires load balancing responsive to at least one attribute different from the identity of the server referenced by the message (page 5 paragraph 0059, page 6 paragraph 0067-0068), and to select for at least one message determined to require load balancing (figure 6 page 6 paragraph 0068), a server to service the client (SAC 101 page 5 paragraph 0059, page 6 paragraph 0073). Berndel teaches a processor comprising a client-controlled processor that directly selects the server to service the client based on at least one attribute (Col. 5 Ln. 1 – 19).

22. As to claim 42, Skene teaches a load balancer according to claim 41, wherein the at least one attribute comprises the time at which the message is received at the interface ("...time to live..." page 6 paragraph 0068).

23. As to claim 44, Skene teaches a load balancer according to claim 41, wherein the at least one attribute comprises a protocol to govern the communication with the server (page 6 paragraph 0068).

24. Claims 8-11,16,18-23,37-40,43,45 and 47-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2001/0047415 A1 to Skene et al. in view of U.S. Pat. No. 6,400,681 B1 to Bertin et al. and further in view of U.S. Pat. No. 6,182,139 B1 to Brendel as applied to claim 6 above, and further in view of U.S. Pat. No. 6,249,801 B1 to Zisapel et al.

25. As to claim 8, Skene is silent with reference to a method according to claim 6, wherein providing the values for the one or more parameters comprise measuring at least one of the parameters.

26. Zisapel teaches a method according to claim 6, wherein providing the values for the one or more parameters comprises measuring at least one of the parameters (Col. 6 Ln. 50 - 55).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zisapel, Brendel, Bertin and Skene because the teaching of Zisapel would improve the system of Brendel, Bertin and Skene by providing access to the closest or best suited server to service a client request (Zisapel Col. 6 Ln. 50 - 55).

28. As to claim 9, Zisapel teaches a method according to claim 8, wherein measuring at least one of the parameters, for at least one of the paths, is performed before receiving the connection establishment request (Proximity Table 54 Col. 6 Ln. 35 - 39).

29. As to claim 10, Zisapel teaches a method according to claim 8, wherein measuring at least one of the parameters for at least one of the paths is performed after receiving the connection establishment request (Col. 6 Ln. 50 - 55).

30. As to claim 11, Zisapel teaches a method according to claim 1, further comprising changing the destination IP address of packets received by the load

balancer from the client, to an IP address of the selected server ("...redirected..." Col. 7 Ln. 53 - 60).

31. As to claim 16, Zisapel teaches a method according to claim 1, wherein selecting a server to provide data for the client comprises selecting, by the load balancer, a second load balancer which is to perform the server selection and selecting, by the second load balancer, a server to provide data for the client (Col. 58 - 67, Col. 16 Ln. 1 – 14).

32. As to claim 18, Zisapel teaches a method according to claim 1, wherein selecting a server to provide data for the client comprises selecting a server which minimizes a function of the one or more parameters ("...weighting..." Col. 7 Ln. 17 - 34).

33. As to claim 19, Zisapel teaches a method according to claim 18, wherein selecting a server to provide data comprises choosing a function of the one or more parameters to be minimized and selecting a server which minimizes the chosen function (Col. 7 Ln. 17 - 42).

34. As to claim 20, Zisapel teaches a method according to claim 19, wherein the function chosen responsive to a protocol with which the virtual server is accessed (Col. 7 Ln. 17 - 34).

35. As to claim 21, Zisapel teaches a method according to claim 19, wherein the function is chosen responsive to the to a virtual server accessed (Col. 7 Ln. 17 - 34).

36. As to claim 22, Zisapel teaches a method according to claim 19, wherein the function is chosen responsive to all attribute of the client (Col. 7 Ln. 17 - 34).

37. As to claim 23, Skene teaches a method according to claim 19, wherein the function is chosen responsive to the time of the selection (figure 6 page 6 paragraph 0068).

38. As to claim 37, Skene teaches a method of selecting a server to be accessed (figure 1 page 2 paragraphs 0027-0030), comprising: receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server (page 3 paragraph 0033, page 6 paragraph 0067); and selecting, by the load balancer, one of the plurality of servers to provide data to the client (page 3 paragraph 0035).

39. Skene is does not explicitly teach the load balancer as being at least primarily responsive to the cost of communications between the client and one or more of the plurality of servers and a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

40. Zisapel teaches the load balancer as being at least primarily responsive to the cost of communications between the client and one or more of the plurality of sewers ("...weighting..." Col. 7 Ln. 17 – 34).

41. Brendel teaches a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters (Col. 5 Ln. 1 – 19).

42. It would have been obvious to one of ordinary skill in the ad at the time the invention was made to combine the teachings of Brendel, Bertin and Skene because the teaching of Brendel would improve the system of Bertin and Skene by minimizing client latency since minimal latency paths tend to go around Internet bottlenecks and as result improves the overall performance of the Internet and/or WAN links (Brendel Col. 3 Ln. 10 - 17).

43. As to claim 38, Zisapel teaches a method according to claim 37, wherein selecting one of the sewers comprises selecting a server under a constraint that a lowest cost client communication connection is used in connecting to the server ("...lowest total weighted..." Col. 7 Ln. 1 7 - 34).

44. As to claim 39, Zisapel teaches a method according to claim 37, wherein selecting one of the sewers comprises selecting a server which minimizes a weighted sum of communication costs to the server and at least one other route related parameter ("...hop...TTL..." "...weighting..." Col. 7 Ln. 6 – 34).

45. As to claim 40, Zisapel teaches a method according to claim 39, wherein selecting one of the sewers comprises selecting a server which minimizes a weighted sum of the communication costs to the server and the round trip delay to the server ("...latency..." "...weighting..." Col. 7 Ln. 6 - 34).

46. As to claim 43, Zisapel teaches a load balancer according to claim 41, wherein the at least one attribute comprises the identity of the client (Request 28 Col. 5 Ln. 32 – 38).

47. As to claim 45, Zisapel teaches a load balancer according to claim 41, further comprising a packet changing unit adapted to change the contents of at least one field of packets belonging to connections for which load balancing was performed ("...redirected..." Col. 7 Ln. 53 - 60).

48. As to claim 47, Skene teaches a method of selecting a server to be accessed (figure 1 page 2 paragraphs 0027-0030), comprising: receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server (page 3 paragraph 0033, page 6 paragraph 0067); and choosing a function from a plurality of predetermined functions utilized by the load balancer for selecting servers, responsive to the received message (Block 915 page 7 paragraph 080);

49. Skene is silent with reference to selecting, by the load balancer, one of the plurality of servers that minimizes or maximizes the chosen function, to provide data to the client and a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server that minimizes or maximizes the chosen function.

50. Zisapel teaches selecting, by the load balancer, one of the plurality of servers that minimizes or maximizes the chosen function, to provide data to the client ("...weighting..." Col. 7 Ln. 17 - 34).

51. Brendel teaches a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server that minimizes or maximizes the chosen function (Col. 5 Ln. 1 – 19).

52. It would have been obvious to one of ordinary skill in the ad at the time the invention was made to combine the teachings of Brendel, Bertin and Skene because the teaching of Brendel would improve the system of Bertin and Skene by minimizing client latency since minimal latency paths tend to go around Internet bottlenecks and as result improves the overall performance of the Internet and/or WAN links (Brendel Col. 3 Ln. 10 – 17).

53. As to claim 48, Zisapel teaches a method according to claim 47, wherein choosing the function comprises choosing responsive to an identity of the client ("...closest to client 26..." Col. 7 Ln. 17 – 34).

54. As to claim 49, Skene teaches a method according to claim 47, wherein choosing the function comprises choosing responsive to a time at which the message is received ("...time to live..." page 6 paragraph 0068).

55. As to claim 50, Zisapel teaches a method according to claim 47, wherein at least two of the predetermined functions depend on different groups of one or more parameters Col. 7 Ln. 17 – 34).

56. As to claim 51, Zisapel teaches a method according to claim 47, wherein at least two of the predetermined functions depend on the same parameters but give different weight to one or more of the parameters on which they depend (Col. 7 Ln. 17 – 34).

57. Claims 24-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2001/0047415 A1 to Skene et al. in view of U.S. Pub. No. 2003/01102293 A1 to Friedman et al, and further in view of U.S. Pat. No. 6,182,139 B1 to Brendel.

58. As to claim 24, Skene teaches a method of selecting a server to be accessed (figure 1 page 2 paragraphs 0027-0030), comprising: receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server (page 3 paragraph 0033, page 6

paragraph 0067); and selecting, by the load balancer, one of the plurality of servers to provide data to the server (page 3 paragraph 0035).

59. Skene is silent with reference to the load balancer being closer to the client than to the selected server and a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

60. Friedman teaches the load balancer that closer to the client than to the selected server (page 11 paragraph 0178).

61. It would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Friedman and Skene because the teaching of Friedman would improve the system of Skene by directing network traffic through the most optimal or efficient route including factoring in the geographical locations of the origination and destination points, the geographical locations of intermediate nodes and bandwidth availability (Friedman page 11 paragraph 0178).

62. Brendel teaches a load balancer comprising a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters (Col. 5 Ln. 1 – 19).

63. It would have been obvious to one of ordinary skill in the ad at the time the invention was made to combine the teachings of Brendel, Friedman and Skene because the teaching of Brendel would improve the system of Friedman and Skene by minimizing client latency since minimal latency paths tend to go around Internet

bottlenecks and as result improves the overall performance of the Internet and/or WAN links (Brendel Col. 3 Ln. 10 - 17).

64. As to claim 25, Friedman teaches a method according to claim 24, wherein the load balancer is closer to the client than to any of the plurality of sewers hosting the virtual server (page 11 paragraph 0178).

65. As to claims 26, Brendel teaches a method according to claim 24, wherein the load balancer is in the same metropolitan area as the client (Col. 5 Ln. 1 – 9).

66. As to claim 27, Brendel teaches a method according to claim 24, wherein the load balancer is in the same local area network as the client (Col. 5 Ln. 1 – 9).

67. As to claim 28, Skene teaches a method according to claim 24, wherein the load balancer is not associated with the virtual server (figure 1).

68. As to claim 29, Skene and Friedman are silent with reference to a method according to claim 24, wherein the load balancer is under control of a system manager of the client. However since Friedman teaches the load balancer that could be located at the client it would be inherent that the system manager of the client would control the operations of the load balancer.

69. As to claim 30, Skene teaches a method according to claim 24, wherein receiving the message comprises receiving a DNS query message (page 3 paragraph 0033).

70. As to claim 31, Skene teaches a method according to claim 24, wherein receiving the message comprises receiving from a DNS sewer (page 3 paragraph 0033).

71. As to claim 32, Skene teaches a method according to claim 24, wherein receiving the message comprises receiving a connection establishment request directed to the virtual sever (page 3 paragraph 0034-0035).

72. As to claim 33, Skene teaches a method according to claim 24, wherein receiving the message comprises receiving a message directed to the load balancer (page 3 paragraph 0034-0035).

73. As to claim 34, Skene teaches a method according to claim 24, wherein selecting one of the servers comprises selecting a server, which has a lowest cost path to the load balancer ("...round trip time, packet loss and hops..." page 3 paragraph 0034).

74. As to claim 35, Skene teaches a method according to claim 24, wherein selecting one of the servers comprises selecting a server which has a lowest delay path or a highest packet size path to the load balancer (page 3 paragraph 0034).

75. As to claim 36, Friedman teaches a method according to claim 24, wherein the load balancer is geographically closer to the client than to the selected server (page 11 paragraph 0178).

76. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. No. 2001/0047415 A1 to Skene et al. in view of U.S. Pat. No. 6,400,681 B1 to Bertin et al. and further in view of U.S. Pat. No. 6,182,139 B1 to Brendel as applied to claim 41 above, and further in view of Applicant's Admitted Prior Art (hereinafter referred to as AAPA specification page 14).

77. As to claim 46, Skene is silent with reference to a load balancer according to claim 41, wherein the packet changing unit is adapted to change packets in accordance with half NAT or full NAT procedures.

78. AAPA teaches a load balancer according to claim 41, wherein the packet changing unit is adapted to change packets in accordance with half NAT or full NAT procedures (page 14 lines 14 - 18).

79. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of AAPA, Brendel, Bertin and Skene because the teaching AAPA would improve the system of Brendel, Bertin and Skene by providing a request redirector that would optimal or efficiently select a server to service the request.

Response to Arguments

Applicant's arguments with respect to claims 1-51 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Anya whose telephone number is (571) 272-3757. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles E Anya
Examiner
Art Unit 2194

cea.

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